



6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R09-OAR-2011-0130, FRL 9700-4]

Approval and Promulgation of Air Quality Implementation Plans; Nevada; Regional Haze State and Federal Implementation Plans; BART Determination for Reid Gardner Generating Station

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is approving in part and disapproving in part the remaining portion of the Nevada Regional Haze State Implementation Plan (SIP) that implements the Clean Air Act (CAA) Regional Haze Rule requiring states to prevent any future and remedy any existing man-made impairment of visibility in mandatory Class I areas through a regional haze program. EPA is approving Nevada's selection of a nitrogen oxide (NO_x) emissions limit of 0.20 lb/MMBtu as Best Available Retrofit Technology (BART) for the Reid Gardner Generating Station (RGGS) at Units 1 and 2. EPA is disapproving two provisions of Nevada's BART determination for NO_x at RGGS: the emissions limit for Unit 3 and the compliance method for all three units. EPA is promulgating a Federal Implementation Plan (FIP) which replaces the disapproved provisions by establishing a BART emissions limit for NO_x of 0.20 lb/MMBtu at Unit 3, and a 30-day averaging period for compliance on a heat input-weighted basis across all three units. We encourage the State to submit a revised SIP to replace all portions of our FIP. Moreover, we stand ready to work with the State to develop a revised plan.

DATES: This rule is effective on [insert date 30 days from the date of publication in the Federal Register]

ADDRESSES: EPA has established docket number EPA-R09-OAR-2011-0130 for this action. Generally, documents in the docket are available electronically at <http://www.regulations.gov> or in hard copy at EPA Region 9, 75 Hawthorne Street, San Francisco, California. Please note that while many of the documents in the docket are listed at <http://www.regulations.gov>, some information may not be specifically listed in the index to the docket and may be publicly available only at the hard copy location (e.g., copyrighted material, large maps, multi-volume reports or otherwise voluminous materials), and some may not be available at either locations (e.g., confidential business information). To inspect the hard copy materials, please schedule an appointment during normal business hours with the contact listed directly below.

FOR FURTHER INFORMATION CONTACT: Thomas Webb, U.S. EPA, Region 9, Planning Office, Air Division, AIR-2, 75 Hawthorne Street, San Francisco, CA 94105. Thomas Webb can be reached at telephone number (415) 947-4139 and via electronic mail at webb.thomas@epa.gov.

SUPPLEMENTARY INFORMATION: Throughout this document, wherever “we,” “us,” or “our,” is used, we mean the United States Environmental Protection Agency (EPA).

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I. Background and Purpose

A detailed explanation of the requirements for regional haze SIPs and EPA's analysis of the Nevada Division of Environmental Protection's (NDEP) BART determination for NO_x at RGGS is provided in our Notice of Proposed Rule Making and is not restated here. *See* 77 FR 21896 (April 12, 2012).

RGGS consists of four coal-fired boilers, three of which are BART-eligible units with generating capacity of 100 megawatts (MW) each. A fourth unit (250 MW) is not BART-eligible. Nevada Energy, the owner of RGGS, performed a NO_x BART analysis for the three BART-eligible units at RGGS and submitted the results of its analysis to NDEP.¹ In its BART analysis, Nevada Energy considered several NO_x control technologies and evaluated the cost of compliance and visibility improvement associated with each technology. In preparing the SIP, NDEP relied on certain aspects of Nevada Energy's analysis while performing updated analyses for other aspects.

EPA proposed to fully approve Nevada's SIP on June 22, 2011 (*see* 76 FR 36450), but received numerous comments on our proposed approval of the BART determination for NO_x at RGGS. A detailed description of those comments is in our final rule, which approved all of the Nevada regional haze SIP, except for the BART determination for NO_x at RGGS. *See* 77 FR 17334 (March 26, 2012). After reviewing the public comments, EPA performed additional analyses of the cost-effectiveness and visibility improvement associated with the various NO_x control technologies considered by NDEP in determining BART for NO_x at RGGS. Based upon these additional analyses, EPA did not take final action on the chapters of the SIP containing the NO_x BART determination for RGGS, including the corresponding emission limits and schedules

¹ Nevada Energy BART Analysis Reports, Reid_Gardner_1_10-03-08.pdf, Reid_Gardner_2_10-03-08.pdf, Reid_Gardner_3_10-03-08.pdf. Available in Docket Item No. EPA-R09-OAR-2011-0130-0007.

of compliance for NO_x at RGGS. Specifically, EPA did not take final action on sections 5.5.3, 5.6.3 and 7.2 of NDEP's SIP, addressing the NO_x BART control analyses, visibility improvement, and implementation at RGGS.

EPA published a new proposal to partially approve and partially disapprove NDEP's BART determination for NO_x at RGGS on April 12, 2012. *See* 77 FR 21896. Based on its additional analyses described above, EPA proposed revised control cost calculations for installation and operation of low NO_x burners ("LNB") and overfire air ("OFA") combined with either selective non-catalytic reduction (SNCR) or selective catalytic reduction (SCR) technology.² EPA also performed new CALPUFF visibility modeling to evaluate the visibility improvement from installing and operating LNB with OFA and either SNCR or SCR.

As discussed in detail in our responses to comments, EPA's independent modeling results showed a very small visibility improvement at the Grand Canyon National Park (GCNP) as a result of installing and operating SCR with an 85 percent reduction in NO_x on all three units. The modeled visibility improvement for this scenario was 0.38 dv at the GCNP. The incremental visibility improvement for installing LNB with OFA and SCR rather than LNB with OFA and SNCR was only 0.10 dv at GCNP.

EPA has considered the comments we received on our proposed approval and proposed disapproval. In this final action, EPA is approving NDEP's determination that NO_x BART for RGGS for Units 1 and 2 is an emissions limit of 0.20 lb/MMBtu that can be achieved by installing and operating LNB with OFA and SNCR. EPA is disapproving NDEP's NO_x BART

² As explained in our proposal, NDEP originally selected rotating opposed fire air (ROFA) with RotamixTM as BART for RGGS Units 1-3, but more recently informed us that it will submit a SIP that evaluates the substitution of SNCR with LNB and OFA for ROFA with RotamixTM. 77 FR at 21898. Therefore, we are not approving NDEP's prior selection of ROFA with RotamixTM as the control type for BART. Rather, we are approving NDEP's BART emissions limits for Units 1 and 2 of 0.20 lb/MMBtu. According to the most recent information received from NDEP, these limits can be achieved either with ROFA with RotamixTM or with SNCR with LNB and OFA. ROFA with RotamixTM combines a conventional SNCR system with a proprietary air and reagent injection system.

emissions limit of 0.28 lb/MMBtu for Unit 3. EPA is also disapproving the 12-month rolling average that NDEP adopted for all three units. Concurrently, EPA is finalizing a FIP for RGGS setting a NO_x emissions limit of 0.20 lb/MMBtu for Unit 3 and a 30 successive boiler operating day (BOD) rolling NO_x emissions limit on a heat input-weighted average across all three units.³ This represents a change to the averaging period included in our proposed action on April 12, 2012, which was based on a straight 30 calendar day average. EPA concludes that the change is a logical outgrowth of the proposal and the comments received.

EPA takes very seriously a decision to disapprove these provisions in Nevada's plan, as we believe that it is preferable that all emission control requirements needed to protect visibility be implemented through the Nevada SIP. A revised state plan need not contain exactly the same provisions that EPA has included in the FIP, but EPA must be able to find that the state plan is consistent with the requirements of the CAA. Further, EPA's oversight role requires that we assure fair implementation of CAA requirements by states across the country, even while acknowledging that individual decisions from source to source or state to state may not have identical outcomes. In this instance, we believe that NDEP's NO_x BART determination for RGGS generally meets those requirements except for the specific emissions limit for Unit 3 and the compliance averaging time. As a result, EPA believes this combined approval, disapproval, and FIP is consistent with the CAA at this time, while full approval of the SIP would be inconsistent with the CAA. We look forward to working with NDEP to replace the FIP provisions with a revised SIP.

³ Throughout the preamble we use the term "heat input-weighted average" in describing the 30 successive day rolling emission limit. The regulation does not actually average the data for the 3 units, but sums the total NO_x lb/hr over 30 boiler operating days and divides that total NO_x lb by the sum of the heat input over the same days. The use of the term "heat input-weighted average" is meant to be descriptive of the time period and of the fact that it combines all three units to determine compliance.

II. EPA Responses to Public Comments

EPA received written and oral comments before the close of the public comment period on June 4, 2012. We received major comments in writing from a consortium of environmental and conservation organizations⁴ (“Consortium”), the National Park Service, the Nevada Division of Environmental Protection, Nevada Energy, the Moapa Band of Paiutes, Clark County Rural Democratic Caucus, and about ten individuals. We received comments from the two public hearings held near RGGGS on May 3, 2012, that were attended by about 150 people, many of whom testified. We also received over 13,000 comments from mass mailings initiated by Sierra Club, National Parks Conservation Association, and CREDO Action (Rural Nevada Democratic Caucus). The comment letters, transcripts of the public testimony, and samples of the mass mailers are available for review online in Docket EPA-R09-OAR-2011-0130 at <http://www.regulations.gov>. While the written comments focus largely on the cost of compliance and degree of visibility improvement associated with SCR and SNCR, other topics are included. The oral comments provided as testimony at the public hearings focus largely on SCR and SNCR, but with an emphasis on sustaining jobs in the local community and the health issues experienced by the Moapa Band of Paiutes who live adjacent to Reid Gardner. We respond below to the full range of comments received from all sources.

A. National Consistency

Comment 1: EPA’s proposed BART determination for NO_x at RGGGS is inconsistent with EPA’s decision to require SCR on other similar facilities including the San Juan Generating Station in New Mexico.

⁴ The Consortium’s comment letter was signed by representatives of Sierra Club, National Parks Conservation Association, Moapa Band of Paiutes, Citizens for Dixie’s Future, Defend Our Desert, Friends of Gold Butte, Grand Canyon Trust, and Western Resource Advocates.

Response 1: It is important to note that EPA is approving Nevada's determination that the NO_x BART for RGGS is the emissions rate achievable using modern LNB with OFA and SNCR. We are approving NDEP's decision to reject requiring SCR as NO_x BART because we believe that NDEP's conclusion, that the small improvement in visibility at GCNP did not justify the cost of LNB with OFA and SCR technology, is adequately supported by the facts in this situation.⁵ Congress crafted the CAA to provide for states to take the lead in developing implementation plans, but balanced that decision by requiring EPA to ensure the plans meet the requirements of the CAA. EPA's review of a SIP is not limited to a ministerial approval of a state's decisions. EPA must evaluate whether a state considered the appropriate factors and acted reasonably in doing so. In undertaking such a review, EPA does not usurp a state's authority but ensures that such authority is reasonably exercised.

The CAA and EPA's regional haze regulations set forth five factors that a state should evaluate to reach a BART determination. However, the CAA and our regulations provide flexibility to the state in deciding how the factors in the analysis are weighed. Moreover, for power plants that are smaller than 750 MW, our regulations allow the state to conduct a five-factor analysis that does not conform in all respects to our BART Guidelines for larger sources. *See* 70 FR 39131 (July 6, 2005).

For San Juan Generating Station and other examples cited in the comments, EPA disapproved BART determinations submitted by the states because they did not meet the CAA requirements. Under CAA section 110(c), EPA is required to promulgate a Federal Implementation Plan following disapproval of a state implementation plan submission in whole or in part. EPA's role of making the initial BART determination in a FIP is not directly

⁵ In future discussions comparing SNCR and SCR, both technologies include use of modern LNB and OFA to meet the emission rates discussed in this rule. We will not continue to list the combustion controls separately.

comparable to EPA's role in deciding whether the state's SIP is approvable. EPA and the states generally consider the same factors in the initial BART determination but may weigh those factors differently provided the determination in each case is reasonable. BART determinations are case by case analyses. For example, in the case of San Juan Generating Station, EPA modeled very significant visibility improvement in numerous surrounding Class I areas resulting from emissions reductions associated with SCR, and thus concluded based on its five factor analysis that SCR was BART.⁶ However, at RGGS, the visibility improvement from SCR compared to SNCR is very small. The units at San Juan Generating Station are also significantly larger than the units at RGGS, and the application of the BART Guidelines is mandatory when performing the five-factor analysis. This is not the case for RGGS.

NDEP on the other hand indicated that it had determined SNCR rather than SCR was NO_x BART for RGGS based on weighing the small incremental visibility improvement of SCR against its incremental cost effectiveness. When EPA reviewed NDEP's NO_x BART determination, we found problems in the method NDEP used to calculate cost-effectiveness and in the assumptions on which the modeling was based. Accordingly, EPA independently calculated cost-effectiveness and performed new modeling. In our review, EPA considered both average and incremental cost-effectiveness and visibility improvement. The results of our own analysis of the incremental visibility improvement and cost for SCR differ from NDEP's analysis in certain respects, but support NDEP's decision to establish an emissions limit that can be achieved by installing SNCR technology.

NDEP reasonably determined that NO_x emissions reductions achievable with SNCR would provide some visibility improvement at GCNP at a reasonable cost. Our decision to

⁶ Per 76 FR 503, Table 8, EPA Region 6 modeled visibility benefits of 3.11 deciviews (single Class I area with greatest impact), and 21.69 deciviews (cumulative, all Class I areas within 300 km)

approve NDEP's determination that the emissions rate achievable with LNB with OFA and SNCR is NO_x BART for RGGS is consistent with other national BART SIP approvals as well as proposed FIPs and final FIPs. *See, e.g.,* 77 FR 24385 (April 24, 2012) (Final Maine SIP approval); 77 FR 24027 and 24034 (April 20, 2012) (Proposed Montana FIP); and 77 FR 20894 (April 6, 2012) (Final North Dakota FIP). Other SIPs have rejected more effective controls such as SCR if those controls were found to provide little visibility improvement relative to significant cost. *See, e.g.,* 76 FR 80754, 80758 (Dec. 27, 2011) (Final Kansas SIP approval⁷); 76 FR 16168 (March 22, 2011)(Proposed Oklahoma SIP approval⁸). Therefore, our approval of NDEP's BART determination is consistent with EPA's action on other regional haze SIPs as well as proposed and final EPA FIPs.

In summary, EPA thoroughly and independently reviewed NDEP's basis for selecting a NO_x emissions rate achievable with SNCR as BART for RGGS rather than selecting SCR. In reaching this determination, NDEP weighed the small visibility improvement against the costs of the more effective control option. EPA calculated a lower average and incremental cost-effectiveness value than NDEP. EPA's modeling relied on the regulatory version of the CALPUFF modeling system and improved meteorological inputs, and predicted much less visibility improvement at GCNP from selecting SCR as NO_x BART (average: 0.38 dv, incremental: 0.10 dv). We also evaluated the visibility improvement that would result at four other Class I areas within 300 km of RGGS. Our modeling indicated that SCR would result in only minimal improvement at these four areas. Although we found shortcomings in NDEP's cost-effectiveness and visibility improvement values, we are taking final action to approve NDEP's conclusion that the small visibility improvement does not justify the cost of requiring

⁷ Jeffrey Energy Center 1 and 2, La Cygne Unit 2

⁸ EPA Region 6 proposed approval of the NO_x portions of the Oklahoma RH SIP. See Muskogee Station Unit 4 and 5, Sooner Station Units 1 and 2

SCR as NO_x BART. The comment before us does not change our decision that NDEP reasonably applied the statutory and regulatory factors to determine that the NO_x BART emission rate achievable from SNCR (0.20 lb/MMBtu) is BART for RGGS.

EPA acknowledges that NDEP has greater discretion in applying the BART factors because RGGS is an electric generating unit smaller than 750 MW. In evaluating SIPs, EPA exercises judgment about SIP adequacy, not just to meet and maintain the National Ambient Air Quality Standards (NAAQS), but also to meet other requirements that do not have a specific ambient standard, such as visibility at Class I areas. In this case, Congress established a requirement for BART, and EPA is charged to assure that states meet the requirement. Here, contrary to the commenter's assertion, we are exercising judgment within the parameters laid out in the CAA and consistent with other actions nationally applying our regional haze regulations. Our interpretation of our regulations and the CAA, and our technical judgments, are entitled to deference. *See, e.g., Michigan Dep't. of Env'tl. Quality v. Browner*, 230 F.3d 181 (6th Cir. 2000); *Connecticut Fund for the Env't., Inc. v. EPA*, 696 F.2d 169 (2nd Cir. 1982); *Voyageurs Nat'l Park Ass'n v. Norton*, 381 F.3d 759 (8th Cir. 2004); *Mont. Sulphur & Chem. Co. v. United States EPA*, 2012 U.S. App. LEXIS 1056 (9th Cir. January 19, 2012).

Therefore, we are finalizing our approval of NDEP's NO_x BART emissions rate of 0.20 lb/MMBtu, achievable using modern LNB with OFA and SNCR, for RGGS with two exceptions. For Unit 3, EPA is taking final action disapproving the SIP and promulgating a FIP setting the NO_x emissions limit at 0.20 lb/MMBtu. In addition, EPA is finalizing a 30 successive boiler operating day rolling NO_x emissions FIP limit on a heat input-weighted average across all three units rather than the 12-month rolling average NDEP included in its SIP, which EPA is disapproving.

B. BART Evaluation Process

Comment 2: EPA did not correctly follow the BART process for evaluating the five factors, which should have resulted in selecting SCR and an emission limit corresponding to 90 percent control of NO_x.

Response 2: EPA was not conducting a BART analysis, but was reviewing the adequacy and reasonableness of NDEP's BART analysis. NDEP noted that RGGS is not the size of a facility for which application of the BART guidelines is mandatory when performing its five-factor analysis. In evaluating the five factors, NDEP evaluated visibility impacts by relying on visibility modeling included in the BART analysis submitted to NDEP by Nevada Energy. NDEP concluded that the small improvement in visibility that could be achieved with SCR did not justify the cost of SCR. We are generally approving the State's BART determination because we find NDEP's conclusions as to the appropriate level of BART controls to be reasonable..

NDEP did not consider a SCR system that would achieve 90 percent reduction. For SCR, NDEP assumed the technology would achieve control efficiencies of 78 to 82 percent. *See* Table 1 in 77 FR 21900 (April 12, 2012). The significance of the control efficiency assumption is that it affects the cost-effectiveness of the control technology. Cost-effectiveness (\$/ton) is calculated by dividing the total annual cost (\$) by the total annual tons of the pollutant reduced (tons). Assuming that two different levels of control (*e.g.*, 82 percent versus 90 percent) bear the same cost, higher control efficiency assumptions (*e.g.*, 90 percent) will result in lower cost per ton values because the denominator in the equation is larger.

In reviewing the reasonableness of NDEP's NO_x BART determination, EPA assumed a higher efficiency than NDEP. EPA determined that SCR could reduce 85 percent of the NO_x

emissions from the stack exhaust. EPA continues to find that the correct assumption for the removal efficiency in this case is 85 percent rather than 90 percent. One of the factors EPA considered is that RGGS is not limited in its coal purchase by a contract. RGGS may purchase coal on the spot market, meaning that the rank⁹ and nitrogen content of the coal combusted may vary. Bituminous coals from Utah have a very high btu per pound, which leads to higher NO_x produced during combustion. Coals with high nitrogen content also produce more NO_x when combusted.¹⁰ Since RGGS has access by rail line to a number of different ranks of coal with varying nitrogen, these factors can affect the emission level that can be achieved with the SCR.

Assuming *arguendo* that EPA agreed with the comment that SCR should achieve 90 percent reduction continuously, we would not necessarily change our decision to approve NDEP's BART determination. As noted above, 90 percent control efficiency assumption would lead to a lower average and incremental cost-effectiveness. Even with that, NDEP's BART determination may have been reasonable based on weighing the small incremental visibility improvement of SCR against its incremental cost effectiveness. However, that issue was not before EPA in this action since EPA determined that only 85% reduction could be assumed in this case.

Comment 3: The commenter states that EPA did not follow the two-step process described in 40 CFR 51.301, which involves first identifying the best control technology for reducing NO_x and then applying the five factors to determine the best emissions limit achievable by that technology. A different emission limit should be chosen only if the technology fails to

⁹ Coal rank: The classification of coals according to their degree of progressive alteration from lignite to anthracite. In the United States, the standard ranks of coal include lignite, subbituminous coal, bituminous coal, and anthracite and are based on fixed carbon, volatile matter, heating value, and agglomerating (or caking) properties. <http://205.254.135.7/tools/glossary/index.cfm?id=C>

¹⁰ *Journal of the Air & Waste Management Association*, Volume 55, September 2005, Nitrogen Oxides Emission Control Options for Coal-Fired Electric Utility Boilers.

meet one of the five factors. Instead, EPA provided a list of all feasible methods to remove NO_x, ranked from least effective (worst) to most effective (best) based on their NO_x control efficiency. In sorting through the ranked list of control options to pick the BART control technology, the EPA started at the bottom, with the worst control, and moved up to the best control, thus corrupting the entire process.

Response 3: We reiterate that EPA was not conducting a BART determination for NO_x at RGGS. Rather, we were reviewing the adequacy of NDEP's BART analysis. NDEP noted, correctly, that RGGS is not the size of a facility for which application of the BART Guidelines is mandatory.

The process described in the comment is comparable to the process for determining Best Available Control Technology (BACT) established in the Prevention of Significant Deterioration regulations. The states, however, are not required to use a top-down BACT process for making a BART determination. EPA stated in its final BART rule that, "States should retain the discretion to evaluate control options in whatever order they choose, so long as the State explains its analysis of the CAA factors." *See* 70 FR 39130 (July 6, 2005). NDEP's determination to eliminate SCR from consideration as BART was based on weighing the small incremental visibility improvement from SCR against its incremental cost-effectiveness. This decision is within the discretion that a state can exercise in evaluating BART because it considered the appropriate factors and came to a reasonable determination, especially in this case which was not required to meet all aspects of EPA's BART guidelines.

Comment 4: The proposal does not demonstrate that a NO_x limit of 0.05 lb/MMBtu on a 30-day rolling average basis using SCR has any adverse impacts when subjected to a site-specific, case-by-case, five-factor analysis.

Response 4: The comment does not set forth the appropriate standard for a BART analysis. The process described by the commenter is analogous to a top-down control technology review conducted when determining the BACT for new major stationary sources or major modifications at existing stationary sources. As stated in Response 3, states are not required to use a top-down BACT process for making a BART determination, and states retain discretion to evaluate control options in whatever order they choose, as long as the state explains its analysis of the CAA factors.

NDEP applied the five-factor BART analysis for NO_x at RGGS. NDEP weighed the five factors and concluded that the small visibility improvement expected from installation of SCR did not justify the incremental cost of SCR. EPA independently and thoroughly evaluated NDEP's determination. EPA also considered both average and incremental cost effectiveness as well as visibility improvement. Although we disagree with NDEP's calculation of the cost effectiveness of SCR compared to SNCR, our modeling analysis has demonstrated that the visibility improvement from SCR is very small at GCNP. The visibility improvement from SCR is only 0.38 dv, and the incremental visibility improvement between SCR and SNCR is only 0.10 dv. The annualized cost of SNCR is approximately \$1.02 million per unit, and the annualized cost of SCR is approximately \$3.8 million per unit, making it four times as expensive as SNCR.¹¹ NDEP's determination that NO_x BART is an emissions rate that is achievable with SNCR is reasonable based on its weighing of the small visibility improvement against the cost of SCR.

¹¹ EPA cost estimates, as listed in Appendix B of the TSD to our April 4 proposed action [Appendix B - Control Cost Estimate Revisions (September 2011 updated estimates)]

Comment 5: The statute and regulations do not require EPA to compare the best technology to the next best technology, and then reject the best technology based on incremental differences.

Response 5: EPA was not conducting its own BART analysis but was reviewing the adequacy of NDEP's BART analysis. We agree with the commenter that the CAA and regional haze regulations do not require the state to reject the best technology based on incremental differences. However, we note that the state has the discretion to compare the incremental cost-effectiveness and incremental visibility improvement that will result from various technologies. *See* 70 FR 39129 (July 6, 2005). The state must evaluate the differences between control technologies reasonably and provide a justification for rejecting a technology. For the RGGS NO_x BART determination, we are finalizing our approval of NDEP's elimination of SCR as BART based on the small visibility improvement that would result at the GCNP weighed against its cost-effectiveness. In addition, NDEP noted that RGGS is the size of a facility for which application of the BART Guidelines is not mandatory. Thus, EPA concluded that NDEP's NO_x BART determination was reasonable.

Comment 6: EPA's consideration of the incremental visibility improvement between SCR and SNCR is contrary to law because there is no incremental visibility factor.

Response 6: We disagree with the comment that considering incremental visibility improvement is prohibited by the CAA or our regulations. The CAA and our regional haze regulations specify that the states or EPA must consider cost and visibility in the five-factor analysis. With respect to the cost factor, in promulgating the BART Guidelines, EPA responded to a comment stating: "In addition, the guidelines continue to include both average and incremental costs. We continue to believe that both average and incremental costs provide

information useful for making control determinations.” *See* 70 FR 39127 (July 6, 2005). The commenter did not cite any regulatory language that would preclude incremental cost effectiveness in considering the cost of compliance. With respect to using incremental visibility improvement, EPA’s response to comments on promulgating the BART guidelines stated:

For example, a State can use the CALPUFF model to predict visibility impacts from an EGU in examining the option to control NO_x and SO₂ with SCR technology and a scrubber, respectively. A comparison of visibility impacts might then be made with a modeling scenario whereby NO_x is controlled by combustion technology. If expected visibility improvements are significantly different under one control scenario than under another, then a State may use that information, along with information on the other BART factors, to inform its BART determination. *See* 70 FR 39129 (July 6, 2005).

EPA’s regulations allow states to compare incremental cost-effectiveness and visibility improvements between different technologies. The incremental visibility benefit is one way to compare the visibility improvements from various controls. For this BART determination, NDEP weighed the small incremental visibility improvement against the incremental cost effectiveness. Based on weighing these factors, NDEP provided a reasoned justification for choosing SNCR technology as NO_x BART for RGGS. EPA’s independent analysis indicates that NDEP properly exercised its discretion in its process for weighing the small visibility improvement against the cost-effectiveness to reject SCR.

C. BART Selection Criteria

Comment 7: EPA did not provide the public with the criteria for making its BART determination, which appears inconsistent with the BART Guidelines and the intent of the Regional Haze Rule.

Response 7: As noted previously, EPA was not conducting its own BART analysis. We were reviewing the adequacy of NDEP’s BART analysis. NDEP correctly noted that RGGS is not the size of a facility for which application of the BART Guidelines is mandatory.

After receiving significant comments on our initial proposed rule (76 FR 36450), EPA independently and thoroughly reviewed NDEP's NO_x BART determination and concluded that NDEP provided the public with information regarding the criteria it was applying in making its BART determination. See "Revised NDEP BART Determination Review of NV Energy's Reid Gardner Generating Station Units 1, 2 and 3" revised October 22, 2009. NDEP adequately informed the public about the basis for its NO_x BART determination for RGGS, stating: "NDEP concluded, based on a review of the economic analysis, that the \$/ton of NO_x removed increased significantly for the LNB with OFA and SNCR, and ROFA with SCR technologies without correspondingly significant improvements in visibility." *Id.* page 6. We are approving NDEP's determination that NO_x BART for RGGS is an emissions rate that is achievable by installing and operating LNB with OFA and SNCR because NDEP reasonably weighed the small incremental visibility improvement that would result from installation of SCR against its higher cost. NDEP adequately disclosed the factors it considered in its BART determination.

Comment 8: EPA fails to explain what level of incremental cost or visibility improvement would justify SCR. EPA should disclose the dollar limit and rationale for what constitutes "cost effectiveness," and how its method is consistently applied across other facilities and states.

Response 8: EPA's approval of NDEP's BART determination is based on finding that the State adequately considered the appropriate factors for BART and provided a reasonable explanation for selecting a NO_x emissions rate that can be achieved with SNCR. NDEP explained that requiring SCR technology would result in a small incremental visibility improvement over SNCR when weighed against the incremental cost-effectiveness of SCR. As stated in our proposed approval, our modeling analysis was performed "in a manner that more

closely adheres with current EPA regulatory guidance on CALPUFF modeling.” *See* 77 FR 21903 (April 12, 2012). Our analysis found that the average and incremental visibility improvement would be significantly lower than the visibility improvement relied upon by NDEP. In addition, EPA’s revised cost analysis also indicated lower cost per ton of pollutant removed for SCR. In our analysis, we evaluated the cost-effectiveness of both technologies (SCR and SNCR with LNB and OFA) based on using the Control Cost Manual (CCM) for including appropriate costs.

Our modeling shows that there would be a very small improvement in visibility at the GCNP from using SCR at RGGGS. Based on this analysis we have determined that we can approve NDEP’s determination that RGGGS is required to comply with a NO_x emissions rate that can be achieved with SNCR as BART. Although the values that EPA considered for cost-effectiveness and visibility improvement differ from NDEP’s analysis, we conclude NDEP’s analysis reasonably weighed the small visibility improvement against the cost to eliminate SCR.

One comment faults EPA, stating: “EPA further fails to explain what level of incremental cost or visibility improvement would justify the incremental cost.” *See* Consortium Letter at page 6. EPA’s BART guidelines did not establish bright-line thresholds for cost-effectiveness or visibility improvement, choosing to allow the states to exercise discretion to choose such values when appropriate. EPA stated:

We agree with the suggestion that the use of a comparison threshold, as is done for determining if BART-eligible sources should be subject to a BART determination, is an appropriate way to evaluate visibility improvement. However, we believe the States have flexibility in setting absolute thresholds, target levels of improvement, or de minimis levels since the deciview improvement must be weighed among the five factors, and States are free to determine the weight and significance to be assigned to each factor. For example, a 0.3, 0.5 or even 1.0 deciview improvement may merit stronger weighting in one case versus another, so one ‘bright line’ may not be appropriate. *See* 70 FR 39129 (July 6, 2005).

The same rationale should apply to cost-effectiveness. A bright line for cost-effectiveness may not be appropriate for every case and is dependent on case specific factors relating to economics and technology. In this case-by-case determination, the small amount of visibility improvement did not justify the cost of SCR.

Comment 9: EPA should explain the amount of incremental visibility improvement from SNCR to SCR that would justify the incremental cost increase of SCR, since no threshold is established in rulemaking or guidance.

Response 9: EPA is not setting generally applicable thresholds for incremental cost-effectiveness or visibility improvement for the reasons discussed above. EPA's BART Guidelines established presumptive emissions limits for SO₂ and NO_x at electric generating units at facilities generating more than 750 MW. But EPA did not extend those presumptive emissions limits to electric generating units at smaller facilities, such as RGGS.

EPA did not establish presumptive cost-effectiveness or visibility improvement values. EPA left weighing the factors to the state providing the state considered the five factors and exercised its discretion reasonably. Here, EPA proposed to find that NDEP reasonably eliminated SCR when it weighed the cost-effectiveness against the small incremental visibility improvement associated with requiring SCR rather than SNCR.

BART is a case-by-case analysis that is initially evaluated by the states. Provided the state exercises its discretion reasonably and meets the requirements of the CAA and regulations, EPA may approve it. EPA's approval is not a ministerial act. In this rulemaking, EPA has carefully reviewed the basis for NDEP's determination. There is no reason, and none is provided in the comment, to support the assertion that EPA should establish thresholds for cost-

effectiveness or visibility improvement, or challenge EPA's authority to approve a BART determination without them.

Comment 10: EPA's use of incremental visibility improvement to find that the cost of SCR is unjustified contradicts its finding that SCR is cost-effective (77 FR 21901).

Response 10: The commenter mischaracterizes EPA's proposed approval. The commenter is correct that we did not find the average and incremental cost-effectiveness of SCR to be cost prohibitive. Nevertheless, our evaluation supported NDEP's determination that the small amount of visibility improvement at GCNP did not justify the cost of SCR.

The comment states that EPA has invented a "sixth factor" by "concatenating incremental visibility and incremental cost." *See* Consortium Letter, page 7. EPA has not invented an additional factor in the BART analysis but has approved a reasonable conclusion reached by NDEP when it weighed these two factors. NDEP's weighing two factors in the analysis does not create a sixth factor. The comment does not explain how weighing two factors in the five-factor analysis constitutes stringing together and joining those factors into a sixth factor.

National Parks Conservation Association and Sierra Club wrote to EPA on June 29, 2012, concerning several regional haze actions. We are treating this letter as a late comment on our proposed action and including it in our docket as such. This letter indicates that NPCA and Sierra Club understand that our approval is based on finding that NDEP reasonably weighed visibility improvement and cost-effectiveness rather than inventing an additional BART factor.

The letter provides:

In many cases, EPA has summarily concluded that the incremental costs of concededly superior controls are not warranted by the visibility benefits determinations, which are routinely at odds with the Agency's own analysis demonstrating that installing the most effective controls will yield needed visibility improvements. *See* Letter dated June 29, 2012, page 1.

EPA's analyses are also based on weighing the five BART factors. The relative weight of the cost-effectiveness and visibility improvement varies depending on the facility at issue. For the three 100 megawatt units at RGGS, EPA concludes that notwithstanding differing conclusions about both cost and visibility improvement, NDEP reasonably determined that a small visibility improvement at GCNP does not justify the cost of SCR. Our approval of NDEP's NO_x BART determination on this basis is consistent with our actions on other regional haze SIPs. *See, e.g.*, 77 FR 24385 (Apr. 24, 2012)(Final Approval of Maine SIP).

D. Cost Analysis

Comment 11: The incremental cost difference between SCR and SNCR is less than EPA estimated because the cost of SCR is overestimated and the cost of SNCR is underestimated, making SCR look relatively more expensive than is the case.

Response 11: The comment does not provide any basis for EPA to revise its proposed approval of NDEP's NO_x BART determination. Our proposal stated:

Based on our revised cost estimates, we do not consider these [EPA's] average and incremental cost effectiveness values for SCR and LNB and OFA as cost prohibitive. Our analysis of this factor indicates that costs of compliance (average and incremental) are not sufficiently large to warrant eliminating SCR from consideration. The incremental cost effectiveness values for Units 1 and 2 are around \$4,500/ton. Although EPA does not consider this incremental cost prohibitive, we note that the State has certain discretion in weighing this cost. Because RGGS is not a facility over 750 MW and therefore not subject to EPA's presumptive BART limits, the State may exercise its discretion more broadly in this particular determination. *See* 77 FR 21901 (April 12, 2012).

Even if the average and incremental cost-effectiveness between SCR and SNCR were somewhat different, NDEP's BART determination would still be approvable based on its reasonable weighing of the cost and visibility improvement factors.

Comment 12: EPA incorrectly estimated the cost-effectiveness of SCR (i.e., dollars per ton of emissions removed on an annual basis) by assuming that SCR can achieve an annual

average emission no lower than 0.083 to 0.098 lb/MMBtu, despite substantial evidence that SCR can achieve 0.05 lb/MMBtu or lower on an annual basis.

Response 12: EPA disagrees with this comment. Regarding the accuracy of the cost effectiveness calculations of SCR, the commenter is correct that we estimated cost-effectiveness of SCR based on annual average emission rates ranging from 0.083 to 0.098 lb/MMBtu. However, we indicated in our proposal that we did not find SCR to be cost prohibitive at these emission rates. As a result, although we did consider more stringent SCR emission rates, such as 0.06 lb/MMBtu, when evaluating visibility improvement, we did not also revise our cost estimates to reflect the more stringent SCR emission rates, since we had already indicated that did not find SCR to be cost prohibitive at the less stringent SCR emission rates. It would not have been in any way determinative to our decision to find that SCR was “even more” cost-effective or that the incremental cost-effectiveness value between SCR and SNCR was “even more” incrementally cost-effective.

Regarding the emission rate achievable by SCR, the BART Guidelines state that: “[i]n assessing the capability of the control alternative, latitude exists to consider special circumstances pertinent to the specific source under review, or regarding the prior application of the control alternative” (70 FR 39166, July 6, 2005).¹² In other words, the BART emission limits are not required to represent the maximum level of control ever achieved by a given technology. Limits set as BACT under the PSD program, or emission rates achieved from the operation of individual facilities under an emission trading program (e.g., Clean Air Interstate Rule), may provide important information, but should not be construed to automatically represent the most appropriate BART limit for all facilities.

¹² Although NDEP’s BART analysis for RGGS need not conform to the BART guidelines because the capacity of RGGS is smaller than 750 MW, the BART guidelines do provide useful guidance in setting appropriate BART limits.

The coal composition is also an important component of estimating the NO_x emissions rate that a facility can achieve. RGGS is capable of purchasing coal on the spot market so there is likely to be variability in the NO_x emissions rate that would be achievable with SCR or SNCR. As previously discussed in the response to Comment 2, RGGS receives its coal by rail line and has access to different ranked coals with varying nitrogen content, which influence the NO_x concentration in the exhaust going to either SNCR or SCR controls. EPA's policy is to set an emission limit that would reasonably accommodate the various coal sources under these circumstances.

EPA disagrees with this comment, but even if we accepted the premise that RGGS is capable of continuously meeting an emission limit of 0.05 lb/MMBtu, the comment does not provide any basis for EPA to change our approval of NDEP's SIP or our FIP. Assuming the cost of achieving 0.05 lb/MMBtu was equal to the cost of achieving 0.083 to 0.098 lb/MMBtu, using a NO_x emissions rate of 0.05 lb/MMBtu for SCR would likely result in lower average and incremental cost per ton values. Thus, we would calculate SCR to be more cost-effective (i.e., lower dollars per ton) on an average and incremental basis. As stated above, EPA did not determine the average or incremental cost of SCR to be prohibitive. Rather, EPA's approval of NDEP's determination that NO_x BART for RGGS for Units 1 and 2 is an emissions limit of 0.20 lb/MMBtu that can be achieved by installing and operating LNB with OFA and SNCR is based on our determination that NDEP reasonably weighed the visibility improvement against the other factors in rejecting SCR. EPA does not believe this analysis would be significantly altered by slightly lower incremental cost numbers.

Comment 13: EPA did not correct all the errors in the State's cost calculations for SCR (e.g., lack of multiple unit discounts, high reagent costs, incorrect capital recovery factor), which

would have further reduced the cost and improved the cost effectiveness of SCR, thereby reducing the incremental cost difference with SNCR.

Response 13: EPA partially agrees with this comment. EPA's revised cost-effectiveness values are consistent with EPA's regulations and the parameters set forth in the CCM. EPA explained in promulgating the BART Guidelines that "[s]tates have flexibility in how they calculate costs." *See* 70 FR at 39127 (July 6, 2005). A state may deviate from the Control Cost Manual provided its analysis is reasonable. EPA independently evaluated NDEP's cost-effectiveness calculation, stating in our proposal:

We received several public comments that NDEP's cost calculations were overestimated and based on methodology inconsistent with EPA's Control Cost Manual (CCM). [footnote omitted]. We agree that NDEP included inappropriate costs and our analysis excludes those costs that are not allowed by the CCM. *See* 77 FR 21901 (April 12, 2012).

Our proposal noted that we did not revise the cost-effectiveness calculation to adjust for all of the discrepancies with the CCM because based on our initial adjustments we found that SCR was not cost-prohibitive. It would not have been in any way determinative to our decision to find that SCR was "even more" cost-effective or that the incremental cost-effectiveness value between SCR and SNCR was "even more" incrementally cost-effective.

As discussed above, EPA is approving NDEP's determination that NO_x BART is an emissions limit achievable with SNCR rather than SCR. The basis for our approval is that when NDEP weighed the small visibility improvement of moving from an emissions limit achievable with SNCR to one based on SCR against the incremental cost-effectiveness of SCR, NDEP determined that NO_x BART for RGGS for Units 1 and 2 is an emissions limit of 0.20 lb/MMBtu that can be achieved by installing and operating LNB with OFA and SNCR. NDEP has discretion in determining how to weigh the factors in reaching a BART decision under the CAA

and regional haze regulations. NDEP's rationale for its decision, although based on different values than EPA calculated and modeled, was reasonable. Therefore, EPA is approving NDEP's determination.

The comment implies that correcting each of the costs listed as incorrect and substituting a SCR emissions limit of 0.05 lb/MMBtu rather than 0.06 lb/MMBtu for SCR would yield a very low incremental cost difference between SCR and SNCR. However, that implication is not supported by the comment. The comment does not calculate an alternative average or incremental cost-effectiveness differential between SCR and SNCR. Therefore, EPA is approving NDEP's conclusion that the incremental cost-effectiveness is not justified when weighed against the small visibility improvement.

Comment 14: EPA did not consider the adverse non-air quality impacts of SNCR due to ammonia injection, which would increase the cost of SNCR and reduce the incremental cost difference with SCR.

Response 14: As noted previously, EPA was reviewing the State's BART determination to evaluate whether NDEP reasonably applied the requirements of the CAA and the regional haze regulations. EPA anticipates that ammonia emissions will be quite low because these units are equipped with baghouses and wet scrubbers that each can be expected to remove most ammonia slip associated with SNCR or SCR. To the extent the commenter is concerned that considering costs due to ammonia injection would lower the incremental cost-effectiveness value between SCR and SNCR, EPA reiterates that our proposed approval of NDEP's RGGS NO_x BART determination is not based on agreeing with NDEP that SCR is not cost-effective. EPA's proposed approval states that SCR is cost-effective. Nonetheless, the BART determination is a multiple-factor analysis. NDEP has discretion to determine how to weigh the factors. Our

independent analysis of the two critical factors demonstrated that the NDEP reasonably weighed the cost of SCR controls against the small visibility improvement to determine that SNCR is NO_x BART for RGGS.

Comment 15: In determining the average and incremental cost-effectiveness, EPA should have used actual emissions for the baseline value of each unit rather than each unit's annualized maximum permitted heat input multiplied by each unit's maximum permitted NO_x limit, which is closer to the potential to emit (PTE).

Response 15: EPA disagrees with this comment. Again, we note that EPA was not performing its own BART analysis, but was reviewing the adequacy of NDEP's BART analysis. The commenter is correct in noting that, in our review of NDEP's evaluation of the cost of compliance, we did not modify the estimate of baseline annual emissions that NDEP used in its cost calculations. We agree that NDEP's baseline more closely represents the sources' PTE, and results in higher baseline annual emissions than the methodology proposed by the commenter, which would rely almost entirely on past actual annual emissions. Because the regional haze regulations and BART Guidelines are not prescriptive regarding the calculation of baseline emissions, stating that "the baseline emissions rate should represent a realistic depiction of anticipated annual emissions for the source"¹³, the commenter's proposed methodology is a potentially acceptable way to calculate baseline annual emissions. NDEP used a methodology that resulted in a higher estimate of baseline annual emissions, and we consider the methodology used by NDEP to be within the discretion afforded to states.

E. Cost of Compliance

Comment 16: Use of EPA's *Air Pollution Control Cost Manual* ("CCM") is not required since RGGS is less than a 750 megawatt facility.

¹³ 70 FR 39167, July 6, 2005

Response 16: EPA agrees that the states are not required to use the CCM for electric generating units smaller than 750 MW but that it is generally a good guide concerning costs to include and exclude. EPA performed an independent average and incremental cost-effectiveness calculation using the CCM to evaluate whether NDEP had reasonably weighed small visibility improvements against the incremental cost-effectiveness of requiring SCR rather than SNCR. EPA's analysis resulted in different cost-effectiveness and visibility improvement values. Although the values for these factors differed from NDEP's values, our analysis supported approving NDEP's NO_x BART determination to establish an emissions limit of 0.20 lb/MMBtu achievable from installing and operating SNCR.

Comment 17: EPA's *Air Pollution Control Cost Manual* is out of date, and thus substantially underestimates current market costs of control technologies including SCR, which misrepresents the cost-effectiveness of chosen technologies.

Response 17: EPA disagrees with the comment. The CCM is a valuable resource to guide the states in evaluating costs that should be included or excluded. The states have discretion to rely on specific capital and annual cost information that is updated or specific to the facility under consideration.

F. Visibility Analysis

Comment 18: EPA underestimated the visibility improvement that would result from SCR by assuming an emissions limit of 0.06 lb/MMBtu (about 84 percent efficiency) instead of 0.05 lbs/MMBtu (about 90 percent efficiency) or lower, which was achieved at 21 coal-fired EGUs in 2011, 11 of which are dry-bottom, wall-fired units like RGGS.

Response 18: EPA disagrees with this comment. As noted previously, the purpose of EPA's independent analyses assessing anticipated visibility improvements and cost-effectiveness

of SCR were to evaluate the reasonableness of NDEP's determination based on weighing small incremental visibility improvement against the incremental cost-effectiveness of SCR. The modeling that NDEP relied on assumed that SCR would reduce NO_x between 78 percent and 82 percent. Although NDEP's assumptions for SCR performance were within the range of emission rates achieved nationwide, EPA determined that for the purposes of visibility modeling and calculating cost-effectiveness of SCR, assuming an 85 percent reduction efficiency to meet an emissions limit of 0.06 lb/MMBtu was reasonable for RGGS. As noted by the commenter, other coal-fired facilities do achieve emission rates of 0.05 lb/MMBtu or lower, and some BART determinations have established a NO_x emission limit of 0.05 lb/MMBtu for SCR. However, as noted in Response 12, emissions information reported to EPA's Clean Air Markets program show that among coal-fired boilers operating with SCR nationwide, there is significant variability in actual NO_x emission rates achieved, ranging from below 0.05 to greater than 0.10 lb/MMBtu.

EPA's assumption that RGGS could meet an emission limit of 0.06 lb/MMBtu is reasonable and within the expected performance range of SCR. The commenter does not provide a basis, *e.g.*, modeling that compares visibility benefits expected from a NO_x limit of 0.05 versus 0.06 lb/MMBtu, to change our approval of NDEP's determination that NO_x BART for RGGS is an emissions limit of 0.20 lb/MMBtu that can be achieved by installing and operating LNB with OFA and SNCR for the three units at RGGS. EPA anticipates that even if we modeled SCR to achieve 0.05 lb/MMBtu instead of 0.06 lb/MMBtu, the visibility benefits of SCR would still be smaller than the benefits modeled by NDEP. For example, if the post-SCR impact at GCNP is scaled by 0.05/0.06, it decreases from 0.20 dv to 0.17 dv. Relative to the 0.59 dv base case impact, the benefit of SCR would correspondingly increase from 0.38 dv to 0.42 dv,

roughly 10 percent higher. However, as discussed in the Technical Support Document (“TSD”) for our proposed rule, EPA’s estimates of visibility impacts are more than 50 percent lower than those relied on by NDEP due to differences in modeling procedures. The net effect of using 0.05 lb/MMBtu as the NO_x emissions factor would not change the fact that EPA’s estimate of SCR’s benefit would remain substantially smaller than that estimated by NDEP. As noted in previous responses, NDEP determined that the visibility benefits of SCR based on its modeling do not justify the cost. Thus, additional modeling of SCR at a lower emission rate is not likely to change NDEP’s consideration of the visibility factor, or our determination that NDEP’s process for weighing the factors is reasonable.

Comment 19: The small visibility improvement from SCR is the result of underestimating the base case emissions and the amount of NO_x that could be removed by SCR. The commenter provided an alternative, larger estimate of SCR benefits by scaling the EPA modeling results.

Response 19: EPA disagrees with this comment. EPA performed an independent modeling analysis to ensure NDEP’s NO_x BART determination was reasonable. Although estimates of the visibility improvement would be larger if EPA had used higher base case emissions, the scaling method used by the commenter does not accurately reflect the effect of a different base case, which would require new modeling. Even if the commenter’s scaling method results were accurate, the estimated visibility improvement remains small. The scaled benefits of SCR provided by the commenter are 0.7 dv at GCNP, and 1.9 dv cumulatively over the five Class I areas; the comparable scaled figures for SNCR would be 0.4 dv and 1.1 dv cumulatively. Thus, using the commenter’s method, the incremental visibility improvement of SCR over SNCR would be 0.3 and 0.8 cumulatively. This is only slightly larger than the EPA-

estimated benefit increase of 0.2 dv at GCNP, and is the same as the EPA-estimated benefit increase of 0.8 dv cumulatively. EPA's decision to approve NDEP's BART determination would be unchanged. See also the response to comment 20.

Comment 20: A commenter states that EPA used NDEP's NO_x baseline emission rates and control scenario emission rates to determine modeled visibility impacts. Because NDEP's emission rates are based on an annual average instead of a maximum 24-hr average, the commenter alleges that EPA underestimated visibility impacts, and provides its own estimate of 24-hr average baseline and control scenario emission rates.

Response 20: We acknowledge that we used NDEP's baseline and control scenario emission rates, based on annual average emission factors, in the visibility modeling supporting our proposed approval. As noted in our proposal, NDEP modified the baseline emission rates and control scenario emission rates that Nevada Energy included in the BART analysis.¹⁴ NDEP did not, however, perform updated modeling to determine the visibility improvement associated with the revised baseline emission rates and revised control scenario emission rates. The absence of modeling results complicated our ability to evaluate the adequacy of NDEP's analysis. To evaluate the adequacy of NDEP's analysis, we performed our visibility modeling using NDEP's revised baseline and revised control scenario emission rates. Again, the purpose of our modeling was to evaluate the adequacy of NDEP's analysis which is not directly comparable to any modeling decisions we might make in our own BART determination as part of a FIP, such as at San Juan Generating Station.

Regarding the use of control scenario emission rates based upon annual average emission factors (in lb/MMBtu) instead of 24-hour average emission factors (lb/MMBtu), we disagree with the commenter that these emission rates do not provide acceptable estimates of visibility

¹⁴ 77 FR 21903

benefits. The methodology for calculating control scenario model emission rates described by the commenter involves applying the estimated control efficiencies of a particular technology to the baseline (pre-control) model emission rate. While this methodology has been used by EPA, it does not preclude the use of other methodologies for calculating control scenario emissions. In the case of control technology performance, engineering estimates of a particular technology's post-control level of performance will often be expressed in terms of lb/MMBtu, either on a 30-day or annual average basis. To the extent that the engineering estimate represents a more accurate depiction of future anticipated emissions at a particular facility, it may be appropriate to rely on the specified post-control level of performance rather than on a control efficiency applied to a pre-control emission rate. In fact, using model emission rates based on an annual average, instead of a 24-hour average, results in more stringent emission rates. As an example, the RGGS Unit 1 model emission rate calculated by the commenter for SCR and LNB with OFA is 99 lb/hr.¹⁵ By comparison, the RGGS Unit 1 model emission rate used by EPA for this same technology is 73 lb/hr.¹⁶

Regarding the use of baseline emission rates based upon the annual average maximum instead of the 24-hour average maximum, we agree with the commenter that the BART guidelines state: "Use the 24-hour average actual emission rate from the highest emitting day of the meteorological period modeled (for the pre-control scenario)." *See* 70 FR 39170 (July 6, 2005). We note, however, that because the capacity of RGGS is less than 750 MW, NDEP is not required to adhere to the BART guidelines, and is therefore afforded some flexibility when evaluating the five statutory factors in its analysis of RGGS. We disagree that the maximum 24-

¹⁵ See Table 13, National Park Service comment letter dated June 4, 2012, from Susan Johnson (NPS) to Thomas Webb (EPA)

¹⁶ As used in Model Scenario c16 that is based on the more stringent level of SCR+LNB+OFA performance of 0.06 lb/MMBtu. See Technical Support Document, Appendix C, Docket Item No. EPA-R09-2010-0130-0077-11 and -15

hour average baseline emissions the commenter provided are representative of RGGS' historical performance.¹⁷ The baseline emissions provided by the commenter include a period of malfunction extending from January 8, 2003 to March 27, 2003. The result is maximum 24-hour average values that overstate RGGS' emission rate, and would therefore also overstate its visibility impact. If examining baseline emissions on a 24-hour average basis, we consider the WRAP NO_x emission rates indicated by the commenter to be more representative of maximum 24-hr average emissions¹⁸, and note that these emission rates were included in our modeling analysis as Scenario c02.

The commenter also provides scaled estimates of visibility benefit based upon its estimates of 24-hour average baseline and control scenario emission rates. Notwithstanding our disagreements with the commenter noted above, if we use the WRAP's maximum 24-hour average emission rate as the baseline instead of the NDEP baseline, and scale our control scenario visibility benefits accordingly, we estimate the following visibility improvement at Grand Canyon National Park:¹⁹

Scenario	Original			Scaled		
	Visibility Impact	Visibility Improvement		Visibility Impact	Visibility Improvement	
		Total (from baseline)	Incremental (from prev)		Total (from baseline)	Incremental (from prev)
	dv	dv		dv	dv	
Baseline NO _x LNB+OFA	0.59	--	--	0.74	--	--
Enh. LNB+OFA	0.51	-0.08	-0.08	0.64	-0.10	-0.10
SNCR+LNB+OFA	0.37	-0.21	-0.13	0.47	-0.27	-0.17
ROFA+Rotamix	0.31	-0.28	-0.06	0.39	-0.35	-0.08

¹⁷ Column 2 in Tables 11, 13, 15, National Park Service comment letter dated June 4, 2012, from Susan Johnson (NPS) to Thomas Webb (EPA)

¹⁸ Column 6, Table 11, *ibid*

¹⁹ Based on Visibility Method 8, best 20 percent days background, as summarized in Appendix E of the TSD from our April 4, 2012 proposed action. [Appendix E - RGGS_TSD_CALPUFF_tables.xls]

SCR+LNB+OFA	0.22	-0.36	-0.09	0.28	-0.46	-0.11
SCR+LNB+OFA (0.06 lb/MMBtu)	0.20	-0.38	-0.10	0.26	-0.48	-0.13

As seen above, the scaled incremental visibility benefit of SCR (at 0.06 lb/MMBtu) compared to the next most stringent technology, ROFA w/ Rotamix, is 0.13 deciviews, whereas the original EPA-estimated incremental visibility benefit is 0.10. This magnitude of incremental visibility benefit is still sufficiently small to justify approval of NDEP's analysis.

G. Cumulative Visibility Benefit Analysis

We are providing a consolidated response to the following comments.

Comment 21: EPA based its BART determination on the visibility benefits of SCR at a single Class I area that has the maximum visibility impact, but should have considered cumulative impacts.

Comment 22: EPA did not consider the cumulative visibility benefits of SCR at all five Class I areas within 300 kilometers that are impacted by NO_x emissions from RGGS, in contrast to performing a cumulative visibility benefit analysis for Four Corners Power Plant and Navajo Generating Station.

Comment 23: EPA modeled the cumulative benefits of various BART controls across all five Class I areas as indicated in Appendix E, but did not include its cumulative modeling results in its proposed rule or TSD.

Comment 24: EPA's modeling results for SCR at all five parks in Appendix E showed a cumulative visibility benefit of 1.07 dv to 1.15 dv, which is significantly greater than the 0.38 dv benefits at GCNP alone.

Comment 25: NPS calculates that the cumulative visibility benefits at five class I areas is about 2.0 dv for SCR on all three units.

Response 21-25: Although EPA did not provide the cumulative sum of visibility impacts over the five nearby Class I areas in the Notice of Proposed Rulemaking, EPA did in fact take into account the impacts at all those areas, considering both the number of areas affected and the impacts and benefits occurring there. EPA provided the modeled visibility impacts and benefits at all five Class I areas in Appendix E of the Technical Support Document. We did not rely on the specific metric advocated by the commenters, i.e. the sum of benefits over the areas, but we did consider the estimated visibility impacts across all five Class I areas in evaluating the reasonableness of Nevada's BART determination. Given the magnitude of the impacts at these areas, however, we focused largely on the benefits at GCNP in our proposed action and placed little weight on the benefits at the remaining four Class I areas. The commenters note that the sum of the visibility benefits across all five impacted Class I areas from requiring SCR is just over 1 dv of improvement. However, as that improvement is spread out over five Class I areas, we do not consider this sufficient reason to reject the State's BART determination, especially in light of the incremental benefits of SCR. On a Class I by Class I basis, there would be little improvement in visibility from requiring SCR.

The comment is correct that EPA provided information about the cumulative visibility improvement modeled for different BART scenarios in our Advanced Notice of Proposed Rulemaking for the Four Corners Power Plant and the Navajo Generating Station. EPA also provided information about the cumulative visibility improvement in our proposed and supplemental BART actions for Four Corners Power Plant. As we stated in those notices, EPA primarily relied on the benefits at the area with the greatest visibility improvement from controls,

but we also considered impacts and benefits at nearby areas, including cumulative visibility benefits. EPA agrees that cumulative visibility benefits summed over multiple Class I areas may be a useful metric that can further inform a BART determination. Such an approach can be useful, for example, in simplifying a complex array of visibility impacts, especially where a source has significant impacts on multiple Class I areas. This approach, however, is not the only means of assessing visibility benefits over multiple Class I areas.

In this action we are evaluating whether NDEP's BART determination for RGGS resulted in the appropriate level of control for that facility. EPA's independent analysis of the modeled visibility improvements at GCNP and all other impacted areas corroborated the results of the NDEP analysis.

Comment 26: Using the WRAP baseline (scenario 00) and EPA's emissions limit of 0.06 lb/MMBtu (scenario 16) for SCR produces a cumulative visibility benefit of 1.82 dv.

Response 26: We disagree with the commenter's use of the WRAP scenario 00 as the baseline against which to measure visibility improvement. Although Scenario 00 models the WRAP NO_x emission rate, it also models the WRAP PM₁₀ and SO₂ emission rates, which correspond to emission rates prior to installation of fabric filters (NDEP's PM₁₀ BART determination) and wet flue gas desulfurization upgrades (NDEP's SO₂ BART determination). Scenario 16 models PM₁₀ and SO₂ emission rates that account for the emission reductions associated with these control technologies. As a result, a comparison of Scenario 00 and 16 overestimates the benefit from SCR, because it also includes the visibility improvement associated with PM₁₀ and SO₂ emission reductions.

H. CALPUFF Model

Comment 27: EPA's accepted version of the CALPUFF model, introduced in 2007, is out of date given that new versions were updated in 2008, 2010, and 2011.

Response 27: EPA disagrees with the commenters that any new CALPUFF version should be used for the BART determination. EPA relied on version 5.8 of CALPUFF because it is the EPA-approved version in accordance with the Guideline on Air Quality Models ("GAQM", 40 CFR 51, Appendix W, section 6.2.1.e); EPA updated the specific version to be used for regulatory purposes on June 29, 2007, including minor revisions as of that date; the approved CALPUFF modeling system includes CALPUFF version 5.8, level 070623, and CALMET version 5.8 level 070623. CALPUFF version 5.8 has been thoroughly tested and evaluated, and has been shown to perform consistently with the initial 2003 version in the analytical situations for which CALPUFF has been approved. Any other version would be considered an "alternative model", subject to the provisions of GAQM section 3.2.2(b), requiring full model documentation, peer-review, and performance evaluation. No such information for the later CALPUFF versions that meet the requirements of section 3.2.2(b) has been submitted to or approved by EPA. Experience has shown that when the full evaluation procedure is not followed, errors that are not immediately apparent can be introduced along with new model features. For example, changes introduced to CALMET to improve simulation of over-water convective mixing heights caused their periodic collapse to zero, even over land, so that CALPUFF concentration estimates were no longer reliable.²⁰

In addition, the latest version of CALPUFF, 6.4, incorporates a detailed treatment of chemistry. EPA's promulgation of CALPUFF (68 FR 18440, April 15, 2003) as a "preferred" model approved it for use in analyses of Prevention of Significant Deterioration increment

²⁰ "CALPUFF Regulatory Update" Roger W. Brode, Presentation at Regional/State/Local Modelers Workshop, June 10–12, 2008, available at <http://www.cleanairinfo.com/regionalstatelocalmodelingworkshop/archive/2008/agenda.htm>

consumption and for complex wind situations, neither of which involve chemical transformations. For visibility impact analyses, which do involve chemical transformations, CALPUFF is considered a “screening” model, rather than a “preferred” model; this “screening” status is also described in the preamble to the BART Guidelines (70 FR 39123, July 6, 2005). The change to CALPUFF 6.4 is not a simple model update to address bug fixes, but a significant change in the model science that requires its own rulemaking with public notice and comment.

Furthermore, it should be noted that the US Forest Service and EPA review²¹ of CALPUFF version 6.4 results for a limited set of BART applications showed that differences in its results from those of version 5.8 are driven by two input assumptions and not associated with the chemistry changes in 6.4. Use of the so-called “full” ammonia limiting method and finer horizontal grid resolution are the primary drivers in the predicted differences in modeled visibility impacts between the model versions. These input assumptions have been previously reviewed by EPA and the FLMs and have been rejected based on lack of documentation, inadequate peer review, and lack of technical justification and validation.

EPA intends to conduct a comprehensive evaluation of the latest CALPUFF version along with other “chemistry” air quality models in consultation with the Federal Land Managers, including a full statistical performance evaluation, verification of its scientific basis, determination of whether the underlying science has been incorporated into the modeling system correctly, and evaluation of the effect on the regulatory framework for its use, including in New Source Review permitting. CALPUFF version 5.8 has already gone through this comprehensive evaluation process and remains the EPA-approved version, and is thus the appropriate version for EPA’s corroboration of NDEP’s BART determination.

²¹ “CALPUFF Status and Update” Tyler J. Fox, Presentation at Regional/State/LocalModelers Workshop, April 30 – May 4, 2012, available at <http://www.cleanairinfo.com/regionalstatelocalmodelingworkshop/archive/2012/agenda.htm>

I. Nitrate Contribution to GCNP

We are providing a consolidated response to the following comments.

Comment 28: The WRAP's modeling supports the fact that NO_x is only a small contributor to visibility impairment at GCNP.

Comment 29: NO_x is mostly from cars and is not a major contributor to haze compared to other pollutants.

Comment 30: The contribution of nitrates from RGGS to haze at GCNP is so insignificant (0.01 percent) that any additional visibility benefit associated with SCR controls would yield an imperceptible improvement at GCNP for a significantly greater cost.

Comment 31: EPA's modeling did not take into account the fact that nearly 25,000 tons per year of NO_x has been eliminated from the emissions inventory due to closure or cancellation of three generating stations (Mohave, White Pine, and Toquop).

Response 28-31: Section 169A of the Clean Air Act requires BART determinations on BART-eligible EGUs regardless of trends or ambient visibility conditions. Application of BART is one means by which we can ensure that downward emission and visibility impairment trends continue. EPA modeling of NO_x from RGGS showed visibility impacts of up to 0.6 deciviews. This is not a negligible contribution to visibility impairment. EPA concluded in this case only that the incremental cost of SCR was not justified in relation to the visibility impact, not that the visibility impact was de minimis. Even if an individual pollutant or source category appears small to some commenters, the many segments of the emissions inventory together do cause visibility impairment, and each must be addressed in order to make progress towards the national goal of remedying visibility impairment from manmade pollution. EPA identifies stationary sources as

an important category to evaluate in any BART analysis. In this case EPA approved the state's conclusion that SNCR was the appropriate BART control.

J. Emissions Limits

Comment 32: The proposed BART NO_x emissions limit (0.20 lb/MMBtu) appears to result in a very small reduction in actual emissions when compared to the performance of the three units over the past two years.

Response 32: EPA evaluated the potential NO_x emissions reduction based on RGGS's permitted emission limits. Actual emissions in tons per year can vary substantially for external reasons such as a downturn in economic conditions generally or unusual weather conditions. Until the permitted emissions limits for RGGS are lowered, RGGS may emit pollutants in those amounts at any time. Therefore, for RGGS the permitted emissions limit is the only enforceable and certain amount to use in calculating potential emission reductions. RGGS is no longer subject to a long-term coal contract and may purchase coal on the spot market. Different coals may also lead to a change in NO_x emissions. RGGS historically burned a very high BTU Utah bituminous coal that when combusted is expected to result in substantially higher NO_x emissions than sub-bituminous coals or lower BTU bituminous coals from Colorado. RGGS has recently added these two coals to the fuel mix at RGGS and the NO_x levels have decreased. EPA determined that the BART emission limit should be achieved when burning any of these coals. Setting a more stringent limit for BART achievable with LNB with OFA and SNCR could prevent RGGS from using only their historical Utah bituminous coal.

Comment 33: Given the sensitivity of boiler operation, size, and configuration, SNCR may not be able to achieve the prescribed level of performance (0.20 lb/MMBtu) on a consistent basis.

Response 33: NDEP will revise the enforceable permit limits to incorporate the NO_x BART emissions limit of 0.20 lb/MMBtu when SNCR is installed and operating at RGGS. EPA expects that Nevada Energy, as the operator of RGGS, will ensure the LNB with OFA and SNCR system is designed to achieve a lower emissions rate than 0.20 lb/MMBtu to insure the BART limit is achieved in practice. RGGS will also be required to continue to operate its continuous emissions monitoring system for NO_x and report any excess emissions. If RGGS exceeds its emissions limit for NO_x, NDEP, EPA or a citizen may bring an enforcement action that can result in penalties and injunctive relief. EPA has determined based on the record provided by the state that NDEP should be able to consistently operate at an emissions limit below 0.20 lb/MMBtu and the comment does not provide a basis for us to revise the final SIP approval or FIP.

K. Compliance Period

Comment 34: Allowing five years from promulgation to install SNCR is excessive since SNCR can be installed in less than one year.

Response 34: We have reconsidered the compliance date in our proposal in response to this comment. The Nevada BART regulation requires that BART control measures at RGGS must be installed and operating “[o]n or before January 1, 2015; or (2) [n]ot later than 5 years after approval of Nevada’s state implementation plan for regional haze by the United States Environmental Protection Agency Region 9 , *whichever occurs first.*” NAC 445B.22096(2)(a)(emphasis added). We approved this requirement into the SIP on March 26, 2012 (effective April 25, 2012). 77 FR 17340. Therefore, the SIP-approved BART implementation deadline at RGGS for all pollutants, including NO_x, is January 1, 2015.

Consistent with this requirement, we are revising the compliance date in our FIP to January 1, 2015.

L. Compliance Method

Comment 35: Commenters state that the proposed method of demonstrating compliance with the NO_x emissions rate is more stringent than the rule requires; does not allow the facility to take credit for the times a unit is not in operation; does not provide a way for a unit that is out of compliance for a period of time to get back into compliance without a continued period of non-compliance; and is in contrast to the BART modeling protocol that directs the use of a pounds per hour limit as opposed to an emissions rate limit for all BART eligible units over a 24-hour basis. Commenters propose an alternate compliance demonstration methodology that consists of a unit-wide 30-calendar day rolling cap (in total lbs of NO_x). The cap is calculated based upon each unit operating continuously (24 hours/day for 30 days) at its permitted maximum hourly heat rate (MMBtu/hr), and at its BART NO_x emission limit (0.20 lb/MMBtu, which was determined based upon the operation of an ammonia injection system in conjunction with LNB). Compliance would then be demonstrated by calculating the unit-wide NO_x emission rate (in total lbs of NO_x) for the current calendar day, and adding it to the previous 29 calendar days' unit-wide NO_x emission rate (in total lbs of NO_x), and comparing this 30-calendar day total to the value of the unit-wide 30-calendar day rolling cap.

Response 35: We disagree with the commenters, and further do not consider the commenters' proposed compliance demonstration methodology to meet BART requirements. The Regional Haze Rule defines BART as "the best system of *continuous* emission reduction for each pollutant", and requires that "each source subject to BART maintain the control equipment required by the subpart and establish procedures to ensure such equipment is properly operated

[...].”²² EPA’s BART determinations for coal fired EGUs have set concentration limits, expressed as lb/MMBtu for the various visibility impairing pollutants averaged over a 30-day period. The proposed and finalized limit is more flexible than typical EPA BART determinations in that it allows the 3 units subject to BART to be averaged together to determine compliance (as requested by NDEP). BART limits are designed to be met at all times, not to provide for a facility to easily come back into compliance from a violation. We disagree that the facility requires additional flexibility to come back into compliance following an exceedance event, and consider a 30-day rolling average to provide a sufficient length of time to allow a facility to address and correct for perturbations that are reasonably expected to occur over the course of normal operations, and that cause short-term extra emissions.

Allowing a facility to take credit for times it is not operating, or for when it is not operating at maximum capacity, would allow RGGS to operate without the BART-required SNCR. SNCR can be expected to remove approximately 30 percent of the potential NO_x emissions. If the overall capacity (as evaluated against the maximum potential MW output) fell below 70 percent in any 30-day period, under the commenter’s proposal RGGS would not have to operate the SNCR ammonia injection at all to meet its limit. Therefore, this would not meet the BART definition application of the best system of continuous emission reduction.

EPA recognizes that there are differences between BART emission limits and the emissions modeled to determine visibility improvements. This is the result of the models requiring short-term emission projections and the need for BART limits to have practical averaging times. Short averaging periods such as 1-hour averages would better correlate to the modeled emissions, but EPA has determined that such a short averaging period is not practical

²² 40 CFR 51.301 and 40 CFR 51.308(e)(1)(v)

for facilities subject to BART. EPA has, therefore, directed that averaging times should be no longer than 30-day rolling averages and should include all periods of startup, shutdown, and malfunction. As discussed above, an emission limit that allows a facility to take credit for non-operation could lead to substantially higher 24-hour emissions of visibility impairing pollutants because the facility could turn off its SNCR.

Specifically, the proposed emission cap, in the form as described by the commenters, does not by itself ensure that the control equipment determined as BART is continuously operated. We acknowledge that the regional haze regulations provide flexibility in establishing requirements and procedures to ensure that control equipment is properly and continuously maintained, and that a mass emission cap could be an acceptable BART emission limitation. In its current form, however, the emission cap proposed by the commenters allows a potential scenario in which, for a given unit-wide 30-calendar day period, one unit could operate at a NO_x emission level of 0.40 lb/MMBtu in exchange for non-operation of another unit (essentially, operating that unit at 0.00 lb/MMBtu). An emission level of 0.40 lb/MMBtu corresponds to operation of LNB only, and does not reflect the operation of SNCR.

In order to allow for better management of the elevated levels of emissions associated with startup events, we have revised our proposed determination method to be based on a boiler operating day average, rather than on a calendar day average. If based on a calendar day basis, the unit-wide 30-day rolling average could include as little as one hour of operation if the units were all offline for an outage that lasted longer than thirty days, because the first hour of operation would be the only data recorded in the last thirty calendar days. If based on a boiler operating day basis, the startup emissions “spike” would be averaged with emission data from

before outage, which would reflect nonzero emissions values, rather than with data from during the outage, which would reflect zero emissions.

M. Environmental Compliance at RGGGS

Comment 36: Environmental controls, monitoring and practices have improved over recent years at the plant, which meets or exceeds all emissions limits, has reduced emissions, and has some of the lowest emissions of any plant in the country.

Response 36: EPA agrees in part with the comment. Nevada Energy has installed controls that substantially reduced the PM emissions from RGGGS and installed ROFA on unit 4 to reduce NO_x emissions. Since monitoring began under the Acid Rain rules, RGGGS has been among the coal fired electric generating units that emits the least SO₂. The same is not true for NO_x emissions from units 1, 2, and 3. By finalizing this action, EPA will ensure that there are also significant reductions in NO_x emissions from RGGGS, as required by the Regional Haze rule and Section 169A of the CAA. Each of the 3 units at RGGGS will reduce NO_x emissions from 0.46 lb/MMBtu to 0.20 lb/MMBtu.

N. Health Effects

Comment 37: Pollution from RGGGS is causing a variety of health problems (e.g., allergies, respiratory illnesses, heart ailments, skin lesions, thyroid disorders, sinus infections) for the Moapa Band of Paiutes who reside directly adjacent to RGGGS.

Response 37: In addition to regional haze, EPA assesses air quality regularly under the CAA with respect to setting and ensuring that areas in the country attain the NAAQS. The NAAQS are the health based standards that are set by EPA for the entire country. RGGGS is located in an area that is designated as attainment for most of the NAAQS.²³ This means that the

²³ Please see http://www.epa.gov/region09/air/maps/maps_top.html for EPA Region IX air quality designations.

air quality in the area surrounding RGGS is meeting most of the national health-based standards set by EPA.

Breathing air containing ozone can reduce lung function and increase respiratory symptoms, thereby aggravating asthma or other respiratory conditions. The area surrounding RGGS was designated nonattainment for the 1997 8-hour ozone NAAQS. The Clark County APCD and NDEP together are responsible for adopting and implementing programs for both stationary and mobile sources to bring the area into attainment for the 8-hour ozone NAAQS. On March 29, 2011, EPA published a direct final rule determining that the Clark County nonattainment area has attained the 1997 8-hour ozone NAAQS (76 FR 17343). Although the area has not been redesignated to attainment, the Clark County area continues to meet the 1997 8-hour ozone NAAQS. On April 30, 2012, EPA issued final designations for the 2008 8-hour ozone NAAQS. Clark County was designated attainment for this more stringent ozone standard.²⁴

The Moapa Band of Paiutes resides on land adjacent to RGGS. The stacks at RGGS release the exhaust at a high elevation for the purpose of preventing excessive concentration of pollutants in the immediate vicinity of the plant.²⁵ Because the area surrounding RGGS is meeting the health-based 1997 and 2008 ozone NAAQS, EPA expects that air quality in the area is protective of human health. Because today's actions require additional reductions in NO_x emissions, air quality will continue to improve. However, regardless of the attainment status of the surrounding area, EPA has been and will remain involved in efforts to ensure that the operation of RGGS meets all environmental requirements. Consequently, EPA believes it has

²⁴ <http://www.epa.gov/ozonedesignations/2008standards/final/region9f.htm>

²⁵ EPA Good Engineering Practice (GEP) <http://www.epa.gov/scram001/guidance/guide/gep.pdf>

implemented the executive order with respect to the Moapa Tribe in these actions implementing BART at RGGS.

O. Environmental Justice

Comment 38: EPA should implement Executive Order 13175 since pollution from RGGS is having a substantial direct effect on the tribe.

Response 38: Ground-level ozone has the ability to impact human health, and is a secondary pollutant formed from precursor gases, primarily volatile organic compounds (VOCs) and NO_x. However, monitored ozone concentrations throughout Clark County, including monitors nearest RGGS, meet the 2008 ozone standard. EPA considers the air quality in the vicinity of the plant to be protective of public health. However, regardless of the attainment status of the surrounding area, EPA has been and will remain involved in efforts to ensure that the operation of RGGS meets all environmental requirements.

P. Economic Impacts

Comment 39: The high cost of SCR could cause RGGS to close, which would harm the local economy through the loss of jobs, the loss of contracts, and the loss of customers for local businesses.

Response 39: EPA has determined that it is cost effective for RGGS to install and operate SNCR at Units 1, 2 and 3. Because EPA is not disapproving NDEP's determination to require SNCR rather than SCR, EPA does not expect the facility to close and thus the comment does not require additional response.

III. Summary of EPA Actions

EPA is approving in part and disapproving in part the remaining portion of the Nevada Regional Haze SIP that implements the Regional Haze Rule that requires states to prevent any future and remedy any existing man-made impairment of visibility in mandatory Class I areas. EPA is approving Nevada's selection of a NO_x emissions limit of 0.20 lb/MMBtu as BART for Units 1 and 2 at RGGS. EPA is disapproving two provisions of Nevada's BART determination for NO_x at RGGS: the emissions limit for Unit 3 and the compliance method for all three units. EPA is promulgating a FIP to replace the disapproved provisions by establishing a BART emissions limit for NO_x of 0.20 lb/MMBtu at Unit 3, and a 30-day averaging period for compliance based on a heat input-weighted basis across all three units.

EPA estimates the total, facility-wide capital costs of complying with this final BART determination for NO_x to be \$26.5 million, and total annual costs (annualized capital costs plus additional operating costs) to be \$4.3 million per year. The FIP requirements on Unit 3, which will require that unit to operate at 0.20 lb/MMBtu instead of 0.28 lb/MMBtu, will result in an additional operating cost of approximately \$75,000 per year and will achieve a NO_x reduction of 393 tons per year. This final BART determination is expected to reduce emissions of NO_x by 58 percent, from 6,980 tons per year to 2,968 tons per year, resulting in a facility-wide average cost-effectiveness of about \$1,078 per ton of NO_x removed. EPA anticipates that this investment will reduce visibility impairment caused by RGGS by an average of 48 percent at 5 Class I areas within 300 km of the facility. A detailed summary of the cost and visibility benefits were provided in the Technical Support Document for the proposed rulemaking.

IV. Statutory and Executive Order Reviews

*A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563:
Improving Regulation and Regulatory Review*

This action finalizes a SIP approval and a source-specific FIP for a single stationary source, the Reid Gardner Generating Station in Nevada. This type of action is exempt from review under Executive Order (EO) 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Order 13563 (76 FR 3821, January 21, 2011).

B. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* Under the Paperwork Reduction Act, a “collection of information” is defined as a requirement for “answers to . . . identical reporting or recordkeeping requirements imposed on ten or more persons” 44 U.S.C. 3502(3)(A). Because the FIP portion of this rulemaking applies to a single facility, Reid Gardner Generating Station, the Paperwork Reduction Act does not apply. *See* 5 CFR 1320(c).

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR Part 9.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) a small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this action on small entities, I certify that this final action will not have a significant economic impact on a substantial number of small entities. As the Reid Gardner Generating Station is not a small entity, the FIP for Reid Gardner Generating Station being finalized today does not impose any new requirements on small entities. *See Mid-Tex Electric Cooperative, Inc. v. FERC*, 773 F.2d 327 (D.C. Cir. 1985)

D. Unfunded Mandates Reform Act (UMRA)

This rule will impose an enforceable duty on the private sector owners of Reid Gardner Generating Station. However, this rule does not contain a Federal mandate that may result in expenditures of \$100 million (in 1996 dollars) or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. EPA's estimate for the total annual cost for Reid Gardner Generating Station to lower its NO_x emissions limit at Unit 3 to 0.20 lb/MMBtu and for Units 1 – 3 to meet that NO_x emissions limit on a 30 successive boiler operating day rolling average does not exceed \$100 million (in 1996 dollars) in any one year. Thus, this rule is not subject to the requirements of sections 202 or 205 of UMRA. This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments. This rule will not impose direct compliance costs on Nevada, and will not preempt Nevada law. This final action will reduce the emissions of one pollutant from a single source, Reid Gardner Generating Station.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or in the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This final action requires emission reductions of NO_x at a specific private stationary source located in Nevada. Thus, Executive Order 13132 does not apply to this action.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

Subject to the Executive Order 13175 (65 FR 67249, November 9, 2000) EPA may not issue a regulation that has tribal implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to

pay the direct compliance costs incurred by tribal governments, or EPA consults with tribal officials early in the process of developing the proposed regulation and develops a tribal summary impact statement.

EPA has concluded that this action may have tribal implications because the Reid Gardner Generating Station is located adjacent to the Moapa Band of Paiutes reservation and the Tribe has expressed its concerns directly to EPA on several occasions. However, this final action will neither impose substantial direct compliance costs on tribal governments, nor preempt Tribal law. This final rule requires Reid Gardner Generating Station, a major stationary source located in Nevada, to reduce emissions of NO_x under the BART requirement of the Regional Haze Rule. This will benefit air quality and the Moapa Band of Paiutes.

EPA consulted with tribal officials early in the process of developing this regulation to permit them to have meaningful and timely input into its development. EPA met with President Anderson on August 11, 2011, and again on April 17, 2012, to hear the Tribe's concerns directly. In addition, EPA held one public hearing on the Moapa Reservation on May 3, 2011, to ensure that tribal members had the opportunity to provide oral testimony.

The Moapa Band of Paiutes joined a consortium of environmental groups to submit comments on our proposed rule. The main concern expressed by the consortium was that EPA was not requiring Reid Gardner Generating Station to install and operate the top NO_x control option, selective catalytic reduction, as BART. The comments also raised potential health impacts and environmental justice concerns relative to the Moapa Band of Paiutes from not requiring the most stringent NO_x control option.

EPA summarized and responded to comments from the environmental consortium and Moapa Band of Paiutes. Our responsibilities under the Executive Order must be exercised in the

context of our role under the CAA, which is to review NDEP's plan and determine if it meets the CAA requirements. We have done a thorough review and have determined that NDEP has adopted an emission limit that meets BART for RGGS. That emission limit can be met with SNCR instead of SCR, but RGGS will still have to install additional pollution control equipment that will reduce NO_x emissions. These emission reductions will not only improve visibility but will provide additional health benefits for the Moapa Band of Paiutes and other residents of Clark County. EPA has been and will remain involved in efforts to ensure that the operation of RGGS meets all environmental requirements.

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

Executive Order 13045: *Protection of Children from Environmental Health Risks and Safety Risks* (62 FR 19885, April 23, 1997), applies to any rule that: (1) is determined to be economically significant as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This rule is not subject to Executive Order 13045 because it requires emissions reductions of NO_x from a single stationary source. Because this action only applies to a single source and is not a rule of general applicability, it is not economically significant as defined under Executive Order 12866, and the rule also does not have a disproportionate effect on children. However, to the extent that the rule will reduce emissions of NO_x, which contributes to

ozone formation, the rule will have a beneficial effect on children's health by reducing air pollution that causes or exacerbates childhood asthma and other respiratory issues.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Pub L. No. 104-113, 12 (10) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards (VCS) in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. VCS are technical standards (e.g., materials specifications, test methods, sampling procedures and business practices) that are developed or adopted by the VCS bodies. The NTTAA directs EPA to provide Congress, through annual reports to OMB, with explanations when the Agency decides not to use available and applicable VCS.

Consistent with the NTTAA, the Agency conducted a search to identify potentially applicable VCS. For the measurements listed below, there are a number of VCS that appear to have possible use in lieu of the EPA test methods and performance specifications (40 CFR Part 60, Appendices A and B) noted next to the measurement requirements. It would not be practical to specify these standards in the current rulemaking due to a lack of sufficient data on equivalency and validation and because some are still under development. However, EPA's Office of Air Quality Planning and Standards is in the process of reviewing all available VCS for incorporation by reference into the test methods and performance specifications of 40 CFR Part

60, Appendices A and B. Any VCS so incorporated in a specified test method or performance specification would then be available for use in determining the emissions from this facility. This will be an ongoing process designed to incorporate suitable VCS as they become available.

Particulate Matter Emissions - EPA Methods 1 through 5

Opacity - EPA Method 9 and Performance Specification Test 1 for Opacity Monitoring

NO_x Emissions - Continuous Emissions Monitors

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994), establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. This rule requires emissions reductions of one pollutant from a single stationary source, Reid Gardner Generating Station.

K. Congressional Review Act

The Congressional Review Act, 5 U.S.C 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the

agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. Section 804 exempts from section 801 the following types of rules (1) rules of particular applicability; (2) rules relating to agency management or personnel; and (3) rules of agency organization, procedure, or practice that do not substantially affect the rights or obligations of non-agency parties. 5 U.S 804 (3). EPA is not required to submit a rule report regarding today's action under section 801 because this is a rule of particular applicability and only applies to one facility, the Reid Gardner Generating Station..

L. Petitions for Judicial Review

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by [*insert date 60 days from publication in Federal Register*]. Filing a petition for reconsideration by the administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (*See CAA section 307(b) (2)*).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Nitrogen oxides, Particulate matter, Reporting and recordkeeping requirements, Sulfur dioxide, Visibility, Volatile organic compounds.

August 13, 2012

Dated:

Lisa P. Jackson,
Administrator

Part 52, chapter I, title 40 of the Code of Federal Regulations is amended as follows:

PART 52--[AMENDED]

1. The authority citation for part 52 continues to read as follows:

AUTHORITY: 42 U.S.C. 7401 *et seq.*

Subpart DD - Nevada

2. Section 52.1470 is amended by:

- a. In paragraph (c), Table 1 revising the entry for “445B.22096.”
- b. In the table in paragraph (e), revising the entry for “Nevada Regional Haze State Implementation Plan (October 2009)”.

The revised text reads as follows:

§ 52.1470 Identification of plan.

* * * * *

(c) * * *

Table 1—EPA-Approved Nevada Regulations and Statutes

State citation	Title/subject	State effective date	EPA approval date	Additional explanation
*	*	*	*	* *

445B.22096, excluding the NO _x averaging time and control type for units 1, 2 and 3 and the NO _x emission limit for unit 3 in sub-paragraph (1)(c), all of which EPA has disapproved.	Control measures constituting BART; limitations on emissions	1/28/10	[Insert page number where the document begins and publication date]	Included in supplemental SIP revision submitted on September 20, 2011, and approved as part of approval of Nevada Regional Haze SIP. Excluding the NO _x averaging time and control type for units 1, 2 and 3 and the NO _x emission limit for unit 3 of NV Energy's Reid Gardner Generating Station, all of which EPA has disapproved.
*	*	*	*	*

* * *

(e) * * *

Name of SIP provision	Applicable geographic or nonattainment area	State submittal date	EPA approval date	Explanation
*	*	*	*	*
Nevada Regional Haze State Implementation Plan (October 2009), excluding the BART determination for NO _x at Reid Gardner Generating Station in sections 5.5.3, 5.6.3 and 7.2, which EPA has disapproved.	State-wide	11/18/09	[Insert page number where the document begins and publication date]	Excluding Appendix A ("Nevada BART Regulation"). The Nevada BART regulation, including NAC 445B.029, 445B.22095, and 445B.22096, is listed above in 40 CFR 52.1470(c).

* * * * *

3. Section 52.1488 is amended by:

a. Revising paragraph (e).

b. Adding paragraph (f).

The revision and addition read as follows:

§ 52.1488 Visibility protection.

* * * * *

(e) *Approval.* On November 18, 2009, the Nevada Division of Environmental Protection submitted the “Nevada Regional Haze State Implementation Plan.” With the exception of the BART determination for NO_x at Reid Gardner Generating Station in sections 5.5.3, 5.6.3 and 7.2; the NO_x averaging time and control type for units 1, 2 and 3 in sub-paragraph (1)(c) of Nevada Administrative Code section 445B.22096; and the NO_x emission limit for unit 3 in sub-paragraph (1)(c) of Nevada Administrative Code section 445B.22096; the Nevada Regional Haze State Implementation Plan, as supplemented and amended on February 18, 2010 and September 20, 2011, meets the applicable requirements of Clean Air Act sections 169A and 169B and the Regional Haze Rule in 40 CFR 51.308.

(f) *Source-specific federal implementation plan for regional haze at Reid Gardner Generating Station Units 1, 2 and 3.* This paragraph (f) applies to each owner and operator of the coal-fired electricity generating units (EGUs) designated as Units 1, 2, and 3 at the Reid Gardner Generating Station in Clark County, Nevada.

(1) *Definitions.* Terms not defined below shall have the meaning given to them in the Clean Air Act or EPA's regulations implementing the Clean Air Act. For purposes of this paragraph (f): *Ammonia injection* shall include any of the following: anhydrous ammonia, aqueous ammonia or urea injection.

Boiler operating day means any 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any of the units identified in paragraph (f) of this section.

Combustion controls shall mean new low NO_x burners, new overfire air, and/or rotating overfire air.

Continuous emission monitoring system or *CEMS* means the equipment required by 40 CFR Part 75 to determine compliance with this paragraph (f).

NO_x means nitrogen oxides expressed as nitrogen dioxide (NO₂).

Owner/operator means any person who owns or who operates, controls, or supervises an EGU identified in paragraph (f) of this section.

Unit means any of the EGUs identified in paragraph (f) of this section.

Unit-wide means all of the EGUs identified in paragraph (f) of this section.

Valid data means data recorded when the CEMS is not out-of-control as defined by part 75 and which meets the relative accuracy requirements of this paragraph.

(2) *Emission limitations* – the total discharge of NO_x from Units 1, 2, and 3, expressed as NO₂, shall not exceed 0.20 lb/MMBtu determined over a 30 successive boiler operating day period. For each boiler operating day, hourly emissions of NO₂, in pounds of NO₂, for units 1, 2 and 3 for that day shall be summed together. For each boiler operating day, heat input, in millions of

BTU, for units 1, 2 and 3 for that day shall be summed together. Each day the 30 successive boiler operating day NO₂ emission rate, in lb/MMBtu, shall be determined by adding together that day and the preceding 29 boiler operating days' pounds of NO₂ and dividing that total pounds of NO₂ by the sum of the heat input during the same 30-day period.

(3) *Compliance date.* The owners and operators subject to this section shall comply with the emissions limitations and other requirements of this section by January 1, 2015 and thereafter.

(4) *Testing and monitoring.* (i) At all times after the compliance date specified in paragraph (f)(3) of this section, the owner/operator of each unit shall maintain, calibrate, and operate a CEMS, in full compliance with the requirements found at 40 CFR part 75, to accurately measure NO_x, diluent, and stack gas volumetric flow rate from each unit. In addition to these requirements, relative accuracy test audits shall be performed for both the NO₂ pounds per hour measurement and the hourly heat input measurement. Each such relative accuracy test audit shall have a relative accuracy, as defined in 40 CFR part 60, appendix F, section 2.6, of less than 20 percent. This testing shall be evaluated each time the 40 CFR part 75 monitors undergo relative accuracy testing. Compliance with the emission limit for NO₂ shall be determined by using valid data that is quality assured in accordance with the requirements of this paragraph.

(ii) If a valid NO_x pounds per hour or heat input is not available for any hour for a unit, that heat input and NO_x pounds per hour shall not be used in the calculation of the unit-wide rolling 30 successive boiler operating day average. Each unit shall obtain at least 90 percent hours of data over each calendar quarter. 40 CFR part 60 Appendix A Reference Methods may be used to supplement the part 75 monitoring.

(iii) Upon the effective date of the unit-wide NO_x limit, the owner or operator shall have installed CEMS software that meets with the requirements of this section for measuring NO₂ pounds per hour and calculating the unit-wide 30 successive boiler operating day average as required in paragraph (f)(2) of this section.

(iv) Upon the completion of installation of ammonia injection on any of the three units, the owner or operator shall install, and thereafter maintain and operate, instrumentation to continuously monitor and record levels of ammonia consumption for that unit.

(5) *Notifications.* (i) The owner or operator shall notify EPA within two weeks after completion of installation of combustion controls or ammonia injection on any of the units subject to this section.

(ii) The owner or operator shall also notify EPA of initial start-up of any equipment for which notification was given in paragraph (f)(5)(i) of this section.

(6) *Equipment Operations.* After completion of installation of ammonia injection on any of the three units, the owner or operator shall inject sufficient ammonia to minimize the NO_x emissions from that unit while preventing excessive ammonia emissions.

(7) *Recordkeeping.* The owner or operator shall maintain the following records for at least five years:

(i) For each unit, CEMS data measuring NO_x in lb/hr, heat input rate per hour, the daily calculation of the unit-wide 30 successive boiler operating day rolling lb NO₂/MMbtu emission

rate as required in paragraph (f)(2) of this section.

(ii) Records of the relative accuracy test for NO_x lb/hr measurement and hourly heat input

(iii) Records of ammonia consumption for each unit, as recorded by the instrumentation required in paragraph (f)(4)(iv) of this section.

(8) *Reporting.* Reports and notifications shall be submitted to the Director of Enforcement Division, U.S. EPA Region IX, at 75 Hawthorne Street, San Francisco, CA 94105. Within 30 days of the end of each calendar quarter after the effective date of this section, the owner or operator shall submit a report that lists the unit-wide 30 successive boiler operating day rolling lb NO₂/MMBtu emission rate for each day. Included in this report shall be the results of any relative accuracy test audit performed during the calendar quarter.

(9) *Enforcement.* Notwithstanding any other provision in this implementation plan, any credible evidence or information relevant as to whether the unit would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed, can be used to establish whether or not the owner or operator has violated or is in violation of any standard or applicable emission limit in the plan.

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